

PATENT SPECIFICATION

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(54) COUNTERSINKER ASSEMBLY

(71) I, AKE KNUTSSON, of Strand-
 vagen 10, Traryd, 280 50 Stromsnasbruk,
 Sweden, of Swedish Nationality, do hereby
 declare the invention, for which I pray that
 5 a patent may be granted to me, and the method
 by which it is to be performed, to be particu-
 larly described in and by the following state-
 ment:—

The invention relates to a countersinker
 10 assembly.

Devices used to countersink holes during
 boring are well known; for example it is well
 known to countersink holes to accommodate
 15 screwheads, boltheads or other similar struc-
 tures that may be fixed in the countersunk
 holes. Known devices of this sort have been
 cumbersome to a large extent and have been
 virtually impossible to use. It has been found
 20 that a certain amount of swarf tends to
 accumulate in the bore hole and the counter-
 sunk hole and causes such a severe friction
 that both the drill and the countersinker
 assembly have been destroyed.

The present invention provides a counter-
 25 sinker assembly which is to be attached to a
 spiral fluted drill, the assembly comprising a
 countersinker having an axial bore to accom-
 modate the drill and being divided longitudi-
 nally into two halves, which are each provided
 30 with a cutting edge, and means for urging the
 halves towards one another to grip the drill.

The invention will be further described by
 way of example only, with reference to the
 accompanying drawings in which:

35 Figure 1 shows a side view of a counter-
 sinker assembly partly in longitudinal cross
 section, attached to a spiral fluted drill;

Figure 2 shows a plan of the arrangement
 of Figure 1;

40 Figure 3 shows a bottom plan of the
 arrangement of Figure 1;

Figure 4 shows a side view of the halves
 of the countersinker; and

45 Figure 5 shows a plan of the halves of the
 countersinker.

The drawings illustrate a countersinker 2
 which is divided longitudinally into two halves,
 each of the halves of the countersinker being

provided with an axial, semicircular section
 track 11; the halves of the countersinker 50
 together enclose a spiral fluted drill 1. For
 urging the halves of the countersinker towards
 one another to grip the drill, a collar 4 is
 arranged, which at the top is provided with
 55 internal threads and at the bottom is formed
 with an internal conical surface. Furthermore
 there is an externally threaded collar 5, which
 at the top is internally conically formed and
 provided with a hole 10 of slightly greater
 60 diameter than the drill. On attaching the
 halves of the countersinker, collars 4, 5 are
 screwed together and engage corresponding
 conically tapering surfaces on the halves. The
 65 collar 5 has external flats 8, so that it can
 be tightened easily by a suitable tool, and the
 collar 4 has a bevel 6. The cutting edge of
 each half of the countersinker leads the respec-
 tive cutting edge of the spiral fluter of the
 drill.

On each of the halves of the countersinker 70
 2 there is an internally threaded hole 9 allow-
 ing attachment of a swarf diverter 3, which
 extends into the spiral flutes of the drill and
 together with the face 12 of the corresponding
 75 half of the countersinker forms a diverting
 channel for swarf. The diverters are arranged
 so that if the countersinker slips rotationally
 on the drill, they are deflected out of the drill
 flutes.

WHAT I CLAIM IS:— 80

1. A countersinker assembly which is to be
 attached to a spiral fluted drill, the assembly
 comprising a countersinker having an axial
 bore to accommodate the drill and being
 85 divided longitudinally into two halves, which
 are each provided with cutting edge, and
 means for urging the halves towards one
 another to grip the drill.

2. A countersinker assembly as claimed in
 Claim 1 wherein the outer surface of the
 90 countersinker has conically tapering regions
 on either side of a cylindrical region, the urg-
 ing means comprising an externally threaded
 collar screwed into an internally threaded
 95 collar, the collars having respective internal

conical surfaces which engage the respective tapering regions so as to urge the halves towards one another as the one collar is screwed into the other.

- 5 3. A countersinker assembly as claimed in Claim 1 or 2, when attached to a spiral fluted drill, wherein the cutting edge of each half leads a respective cutting edge of the spiral fluter of the drill.

- 10 4. A countersinker assembly as claimed in Claim 1, 2 or 3 wherein the halves are each

provided with a swarf separating element which extends into the inward turned spiral flutes of the drill, so that a swarf-diverting channel is formed in conjunction with the countersinker half. 15

5. A countersinker assembly substantially as hereinbefore described with reference to the accompanying drawings.

MARKS & CLERK.

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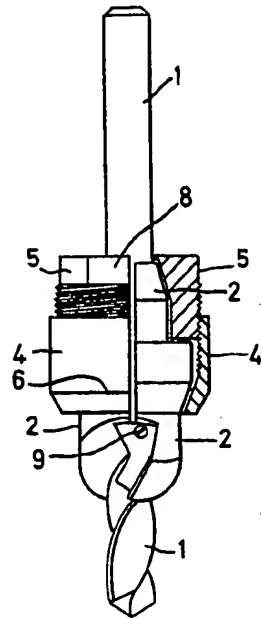


FIG. 1.

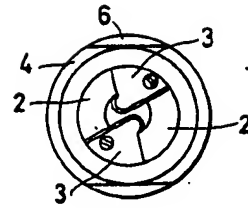


FIG. 3.

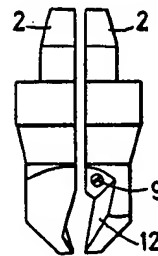


FIG. 4.

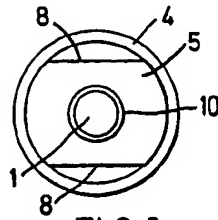


FIG. 2.

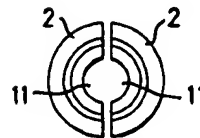


FIG. 5.